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Management of Neck Injury with Tracheal Perforation Due to Rubber Band in Monkey: A Case Report

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Abstract

The article presents penetrating trauma of neck in monkey wound all around the neck since 10 days and its management. The injury was deep in the ventral part of neck with perforation of trachea as air was coming out during the respiration. Surgical management was planned under the general anaesthesia using xylazine and ketamine. During cleaning an embedded rubber band was observed in the wound encircled all around the neck. Injured tissue was closed by putting opposition sutures using Mersilk no.0 leaving the counter opening. Care taker was advised for daily dressing for 4 days than alternate dressing until complete healing. Parental antibiotic Inj. Cefotaxim for 07 days and analgesic Sy. Meloxicam for 3 days were recommended post operatively. On 20th post-operative day skin wound was completely healed except a tiny opening on ventral aspect. The prognosis for tracheal rupture cases is excellent when diagnosed and treated appropriately.

1. Introduction

Trachea called as wind pipe is large bored tube reinforced with c-shaped cartilaginous rings (Hallers et al., 2004). Tracheal traumas range from small puncture wounds to complete tracheal rupture (Scott, 1978 and Fubini et al., 1985) and can be induced by external injuries with or without disruption of the skin or by an internal insult i.e., caused by foreign bodies. Penetrating wounds of the cervical region may cause tracheal, laryngeal and esophageal tears (Jordan et al., 2013). Injuries of trachea are usually noticed in wild life animals during hunting process by carnivores; where as in domestic animals these injuries may result from intraluminal trauma or by extra luminal trauma during automobile accidents and fights (Miles, 1999). Dynamic air leakage from the skin wound, emphysema, and pneumomediastinum are commonly seen in upper airway injury (Basdani et al., 2016). Isolated tracheal injuries are rare with both blunt and penetrating trauma, the associated injuries are often more dramatic, and subtle trauma to the trachea may be overlooked (Jennifer, 2009). Tracheal rupture in animals is an emergency

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condition which should be attended immediately by a veterinarian for better prognosis (Kumar et al., 2016). Several reports focusing on traumatic laryngeal or tracheal rupture in dogs and other animal, but this is rare case of tracheal perforation in monkey by blunt foreign body. The article presents penetrating trauma of neck in monkey and its management.

2. Methodology

A monkey brought to the Veterinary Clinical Complex, College of Veterinary Surgery & A.H. Mhow, with injury

in the neck region since 10 days. Clinical examination revealed that a deepwound encircling all the circumference of neck region (Figure 1). On the ventral aspect of neck, approximately 1 cm perforation of trachea as air was coming out during the respiration (Figure 2). Animal showed the signs of frequent coughing with normal activity and appetite.

Surgical management was planned under the general anaesthesia using xylazine @ 1 mg kg⁻¹ body weight and ketamine @ 6 mg kg⁻¹ body weight. Hairs were clipped all around the injury than copious lavage with normal



Figure 1: Showing the injury all around the neck



Figure 2: Injury after the proper cleaning

saline and debridement (Figure 3). During lavage, an embedded rubber band was observed in the wound encircled all around the neck. The Rubber band (Figure 4) was cut and removed. Antiseptic liquid Betadine was painted on the wound with care, as not allowed to enter in lumen of trachea. Injured tissue and skin was opposed by interrupted sutures using mesrsilk no.0 leaving the counter opening (Figure 5). In between the certain sutures counter openings were left for drainage as it was infected wound. Dressing by using ointment Betadine than bandaging was protected by a plastic mold, as



Figure 3: Tracheal perforation at ventral aspect of neck (arrow)

monkey being furious could self-inflict the wound again. Care taker was advised for daily dressing for 4 days and then alternate dressing until complete healing. Parental antibiotic Inj. Cefotaxim for 07 days and analgesic Sy. Meloxicam for 3 days were recommended. post operatively

3. Results and Discussion

Monkey disrupted the some sutures on 3rd post-operative day, then sutures reapplied under anesthesia. All the sutures were removed at 10th post-operative day followed by dressing of wound. On 20th post-operative day skin wound was completely healed

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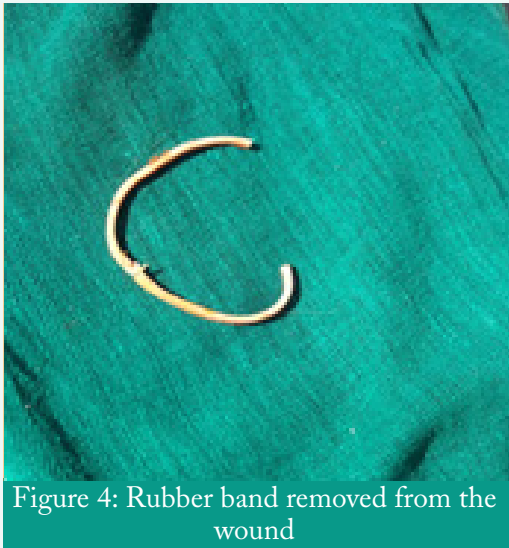


Figure 4: Rubber band removed from the wound

except a tiny opening on ventral aspect (Figure 6). Long-term follow-up of the monkey revealed complete healing of tracheal tear with no signs of respiratory distress. Penetrating injury is more likely to result in airway laceration (Nelson, 2002). In present case tracheal tear and underlying tissue damage is due to continuous penetrating trauma of the rubber band. As the skin and subcutaneous tissue are freely movable, minimal skin wound damage may be associated with a large amount of underlying tissue trauma (Holtand Griffin, 2000).

The small tracheal tear in monkey was allowed to heal spontaneously in present case report. Minor cervical tracheal tears may be self-limiting and heal without intervention (Jardon et al., 2013 and Risselada et al., 2008). Minor tracheal tears in animals with static emphysema and no respiratory distress, in the presence of other significant injuries or due to financial constraints, may be left to heal secondarily (Hedlund, 1991 and Hardie et al., 1999). Conzo et al., (2012) reported that the favorable outcome of small tracheal perforation in patient with conservative treatment, observed spontaneous healing of the tracheal tear. In clinically stable patients with spontaneous breathing a conservative management of tracheal tears is a safe procedure (Ovari et al., 2014). The wound was protected by plastic mold, as special considerations must be made in regards to the animal's temperament and behavior, unique



Figure 5: Suturing of wound using appositional sutures

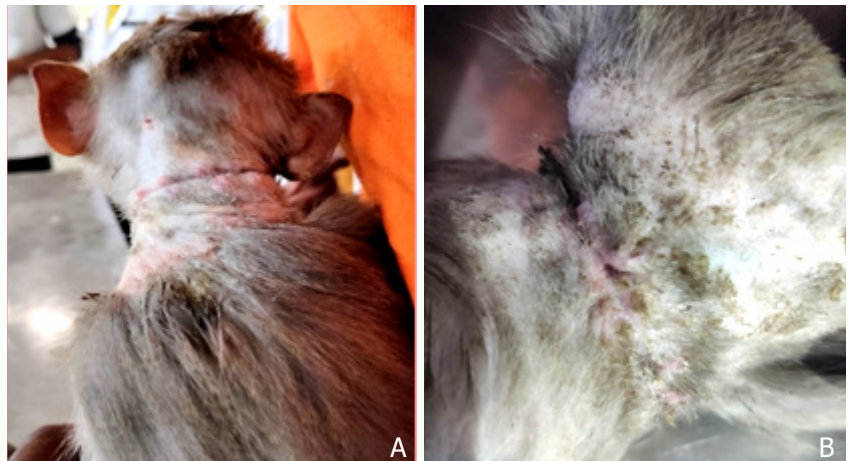


Figure 6: A) Complete healing of wound, B) A small opening on ventral part of neck (arrow) at 20 days

anatomy and small size, and tendency towards secondary stress-related health problems.

4. Conclusion

In the study presented here, the diagnosis of traumatic upper airway perforation is based on clinical examination and confirmed at surgery. The prognosis for tracheal rupture cases is excellent when diagnosed and treated appropriately.

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